

Overview of Human Performance Concepts

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Human Performance Summary

What is Human Performance?

- Human Performance helps us understand the impact of the Organization, Processes, Programs, Equipment and People on the overall performance of a company.
- Human Performance is NOT a new program – it is process that integrates new beliefs, thoughts, actions, and tools into our already existing programs of ISMS, SBMS, EHS, HR and Safety.
- Human Performance strategies allow us to improve the capability and performance of the people in our business models, and as a result error-likely situations are addressed before they become problems, work quality improves, and safety improves.
- Human Performance is NOT common sense, in fact many human performance traps, triggers and tools are counter-intuitive, and require different thoughts and actions at all levels of the organization than we have used in the past.
- Understanding and implementing Human Performance concepts requires a commitment to education and improvement in our capability to recognize situations before they become errors, incident or events.

Human Performance Summary

What is Human Performance?

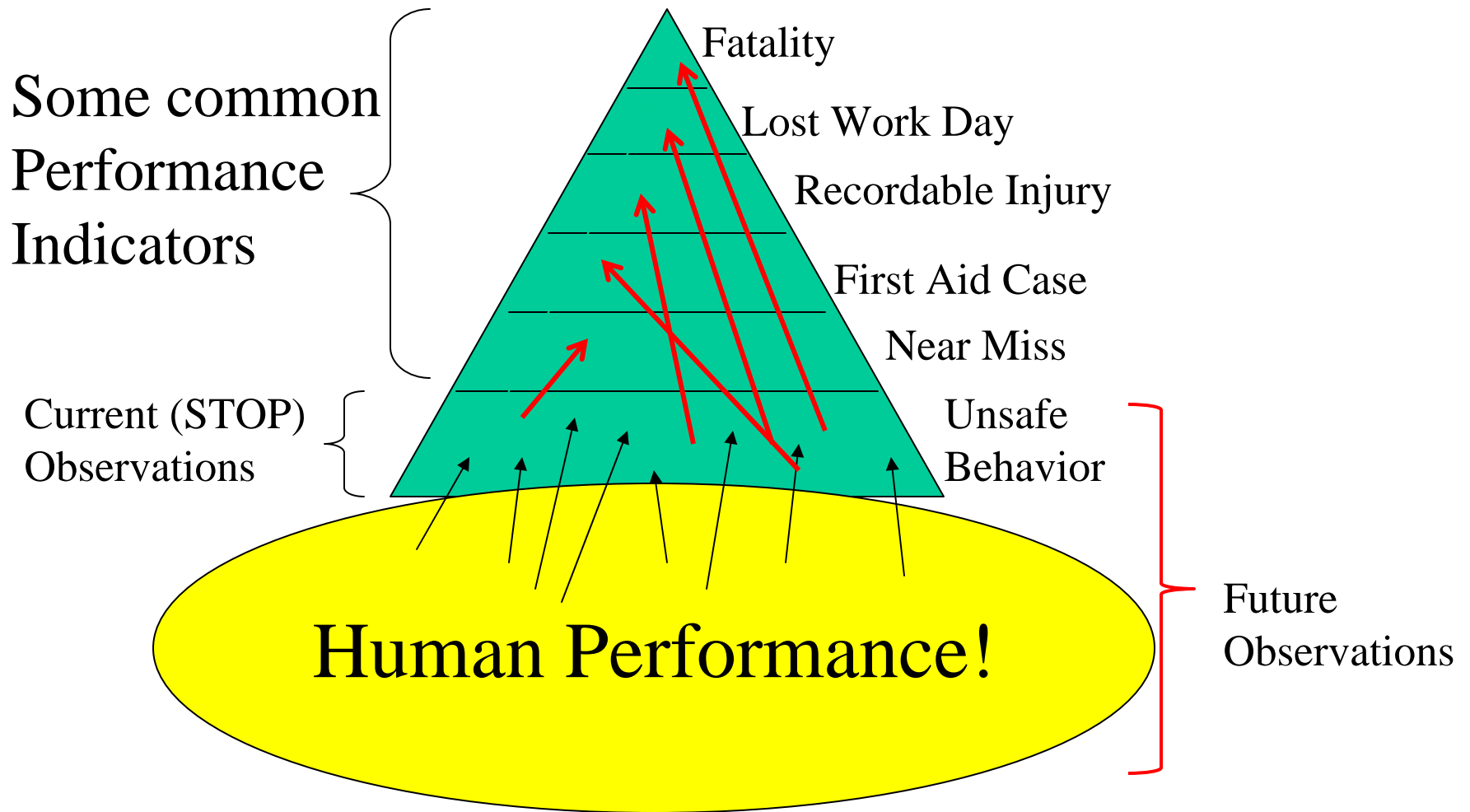
The 5 Guiding Principles

- Organizational values influence individual behaviors
- Performance is based on reinforcement and self-motivation
- Recognition that **People are fallible; even the best make mistakes.**
- Error-likely situations are **predictable** and preventable
- Events can be avoided by understanding **causes** and applying lessons learned

Defining Human Error...

- An action or inaction that unintentionally:
 - Results in an undesirable or unwanted condition
 - Leads a task or system outside of acceptable limits
 - Deviates from a desired set of rules
- Human error is a consequence not a cause
- We have to learn to separate the Errors from the Events

Human Performance & STOP



What are Traps, Triggers and Tools?

- **Traps**
 - Conditions or situations that people may fall into without recognizing it and cause an error, event or incident
- **Triggers**
 - observable **actions** or **reactions**,
 - a recognized thought or individual **perception**
 - or a “**gut-feeling**” that something isn’t right.
- **Tools**
 - Methods used to recognize and avoid traps and prevent errors, events and incidents

Work Environment

Individual Factors

Demands of
Task

Human Nature



Human Performance Improvement focuses on...

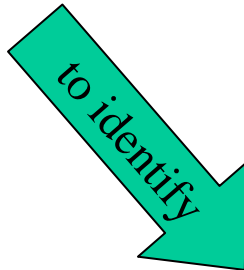
The work activity of:

- This person
- This task
- This time



Tools are Techniques to:

- Avoid having to work in the face of uncertainty.
- Make individuals aware of probable failure rates.
- Allow individuals to apply the right error prevention tool for the situation.
- Identifying small issues before they create big problems.



Error Traps

Stress

Distractions

Time Pressure

High Work Load

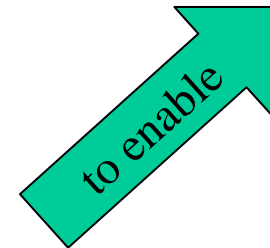
Poor communications

Vague or poor work guidance

Overconfidence in work and/or abilities

Infrequent or first time performing a task (new-to-job)

First working day following time off > 4 days



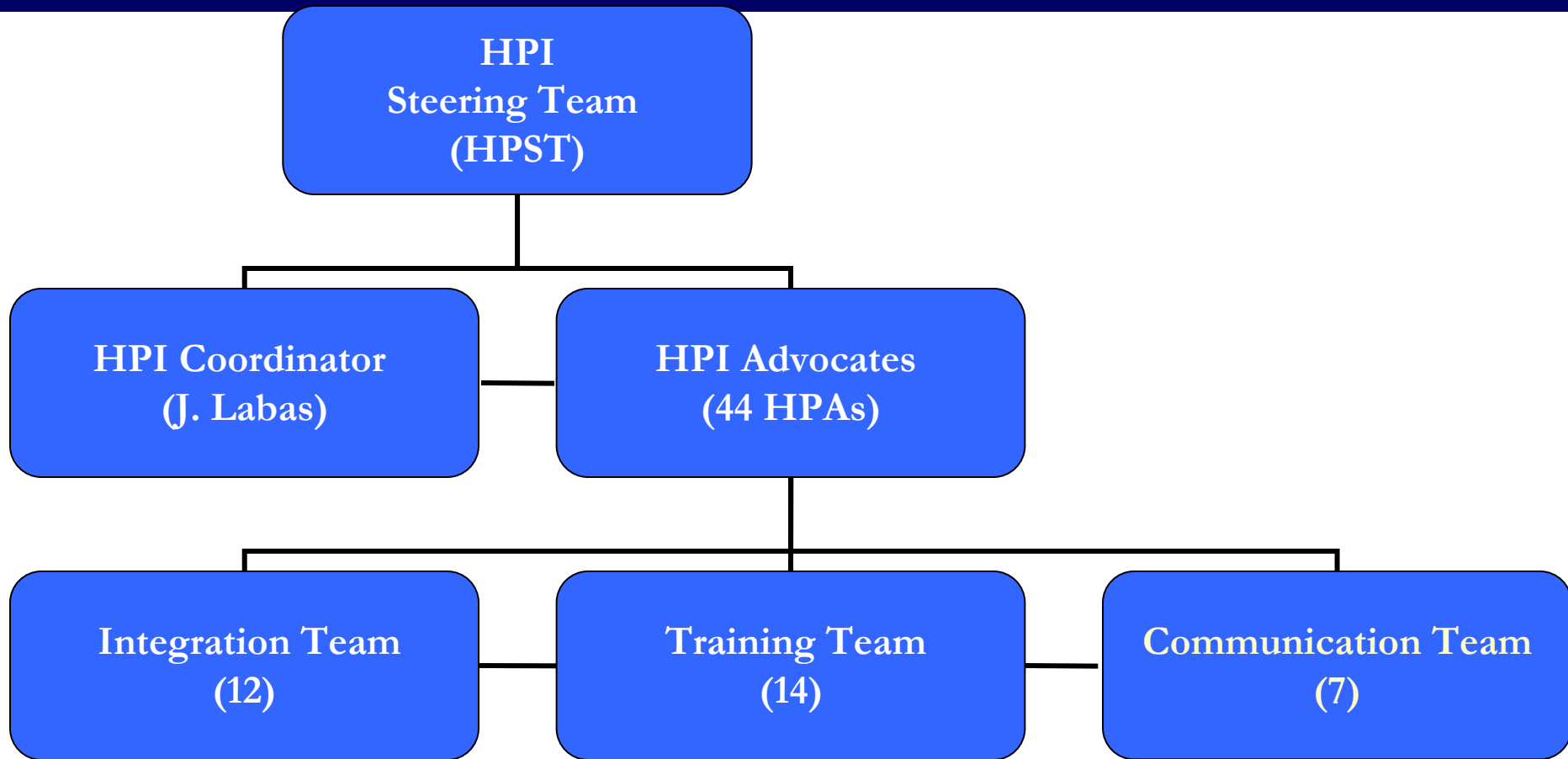
Desired Outcomes

- Safety, EHS, HR, and Quality all approach human performance in one way.
- Work is designed for the right person on the task to be in the optimal performance mode to ensure a successful task.
- Performance improves to a level of zero incidents, reduced rework, and process stabilization.
- Human performance traps, triggers and tools are understood, and used by Lab personnel to prevent errors and events.
- Supervisors & Managers are in the field reinforcing human performance improvement concepts.
- Managers use human performance concepts to improve work and develop effective corrective actions.
- Reduction in events where person is the last touch point
- Gain in productivity, quality, and accident experience
- Observed quantity and quality in pre-job briefings

Conclusions

- Opportunity for us to “raise our game” using techniques tested and proven using an industry we can benchmark
- Approach to human performance is holistic
 - Not fragmented into Safety, EHS, Quality, HR, etc.
 - Analysis process that includes these elements
- Success driven by organization-wide support but based on management drive

BNL's HPI Initiative



BNL's HPI Plan

1. **Formed Steering Team** - trained executives (Policy Council)
2. **Appointed HPI Coordinator/ Project Manager**
3. **Established Advocates (HPAs)** - trained 2 groups (total 44) representing cross-section of lab personnel; act as POCs and assist with HPI integration within own dept./division responsible for integrating at local level
4. **Formed Communication Team** – developed wiki, pocket guide, R2A2...
establish communication plan - e.g. HPST meetings, HPA meetings, Team meetings...
5. **Formed Training Team** - selected candidates for Train-the-trainer program to develop training strategy/plan to train all lab personnel; Training Plan
6. **Formed Integration Team** - integrate HPI into relevant institutional management systems, program descriptions and processes (e.g. SAs)
7. **Evaluate integration progress/effectiveness** – independent review
8. **Benchmark “successful” initiatives; integrations**
9. **Improve HPI integration**
10. **Maintain HPI gains**

Communication Team Status

Current:

- All HPAs listed in SBMS Contact List
- Pocket Guide finalized
- Bulletin Article – Sept. 19th
- “HPI Corner” – Leadership Connection
- Bargaining Unit Newsletter – October
- HealthFest table – Oct. 23rd
- Web Site under construction

Training Status

- Trainer Certification: Seven HPI trainers “certified” by F.I.T.
 - C-AD = 2, F&O = 2, LS = 1, Other = 2 (from Training & QMO)
 - ✓ C-AD – currently training at worker level
Totals: 260 trained of 380 population – 68%
 - ✓ F&O – training at worker level
Totals: 175 trained of 533 population - 33%
 - ✓ LS Directorates – training at worker level
Totals: 121 trained of 257 population – 47%
- ES&H: 43 of 108 = 40%
 - Radcon: 22 of 48 = 46%
 - SHSD: 11 of 31 = 35%
 - EWMS: 10 of 29 = 34%

NEXT: Small Science and “office” personnel...

Integration Team Status

- Continue integration into Work Planning & Control:
e.g. Work Observations (augment STOP/Safety Observations)
- Causal Analysis and Corrective & Preventive Actions
(Events and Issues Management)
- Accident/Incident Investigations
- Design Reviews (Engineering Design)
- ?

HPI

